ACC.14
TCT@ACC-i2 | innovation in intervention

A1120
JACC April 1, 2014
Volume 63, Issue 12

Non Invasive Imaging

UTILITY OF IODINE-123-METAIODOBENZYLGUANIDINE IMAGING IN PREDICTING CLINICALLY RELEVANT VENTRICULAR ARRHYTHMIAS IN PATIENTS WITH SYSTOLIC HEART FAILURE: A SYSTEMATIC REVIEW

Poster Contributions
Hall C
Sunday, March 30, 2014, 9:45 a.m.-10:30 a.m.

Session Title: SPECT Imaging: Focus on Vasodilators, Interpretation and Newer Applications
Abstract Category: 16. Non Invasive Imaging: Nuclear
Presentation Number: 1173-27

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Background: Left ventricular ejection fraction remains the most useful predictor of sudden death and clinically relevant ventricular arrhythmias (CRVA), making it the cornerstone of current criteria for selecting implantable defibrillator (ICD) candidates. However, the utility of new tools like Iodine-123-Metaiodobenzylguanidine scintigraphy (123I-MIBG scan) for predicting CRVA have been tested in several small studies with variable results. If proven to be reliable and reproducible they can help refine the current risk stratification schema and better identify candidates for primary prevention strategies.

Methods: A comprehensive search of articles assessing the predictive role of 123I-MIBG scan on CRVA including: sudden cardiac death, aborted sudden cardiac death, sustained ventricular tachycardia, ventricular fibrillation, appropriate ICD shock was done in Pubmed and Cochrane databases through November, 2013. Imaging variables assessed were early and delayed heart to mediastinum (H/M) ratio and wash-out rate (WR). After screening abstracts, full texts of potentially relevant studies were reviewed by two authors. Data was extracted on standardized forms. Studies reporting 123I-MIBG scan results in patients with and without CRVA were included in the final analysis. Mean difference with standard deviation in the three aforementioned imaging variables was assessed in patients with and without CRVA.

Results: A total of 361 patients were included from 6 observational studies. CRVA occurred in 103 patients (28.5%). In patients without CRVA: early H/M ratio was 2.01±0.24; delayed H/M ratio was 1.87±0.16 and WR was 30.2% ± 8.3. The respective values for patients with CRVA were 1.77 ± 0.19, 1.60 ± 0.10 and 37.9% ± 11.3. Pooled mean differences with confidence intervals were 0.19 (0.11-0.26), 0.27(0.33-0.17), and 7.4% (2.7-12) respectively. P value for all three imaging variables was <0.001.

Conclusion: Patients with cardiomyopathy and CRVA have significantly lower early and delayed H/M ratio and higher WR compared to those without CRVA. The clinical utility of this finding and cut off values for predicting CRVA need to be tested in large prospective studies